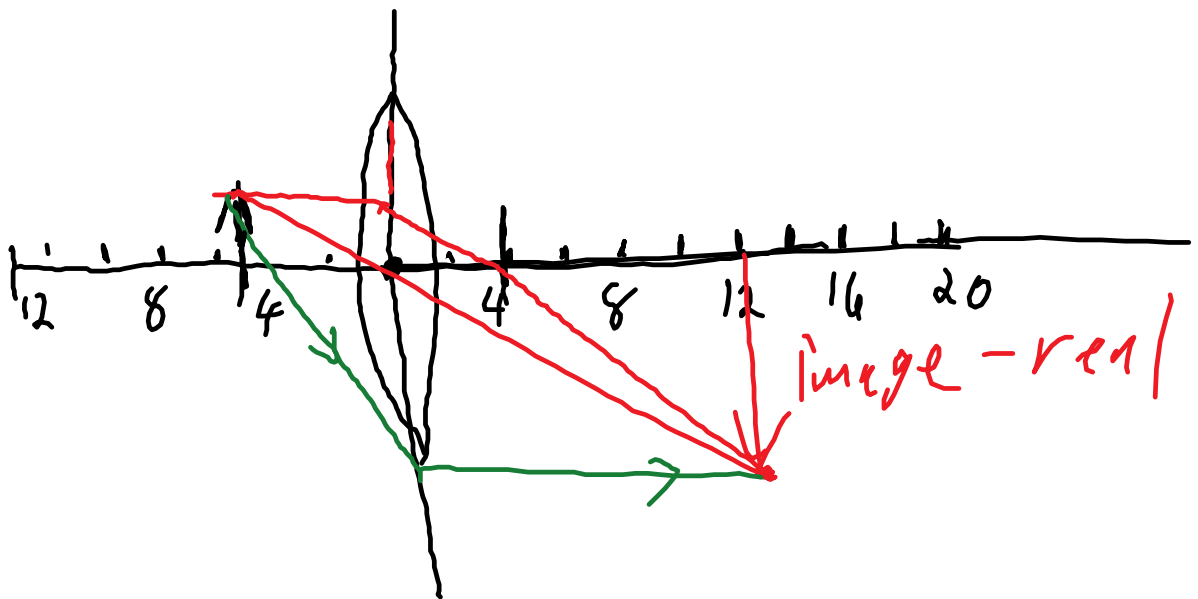
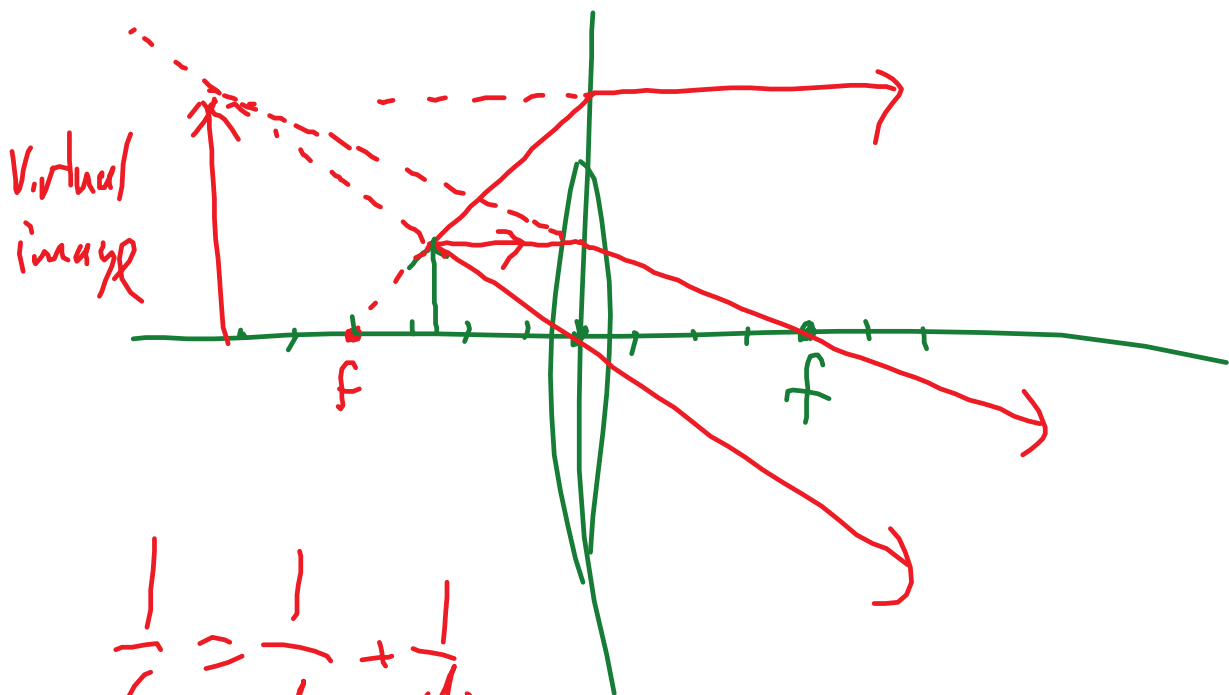


eg. A person looks through a lens at an eraser 3.0 cm high. If you are 5.0 cm from the eraser, what is the size, location and type of image if you look through

- a) a concave lens focal length - 4.0 cm
- b) a convex lens focal length 4.0 cm



- c) a convex lens focal length 8.0 cm

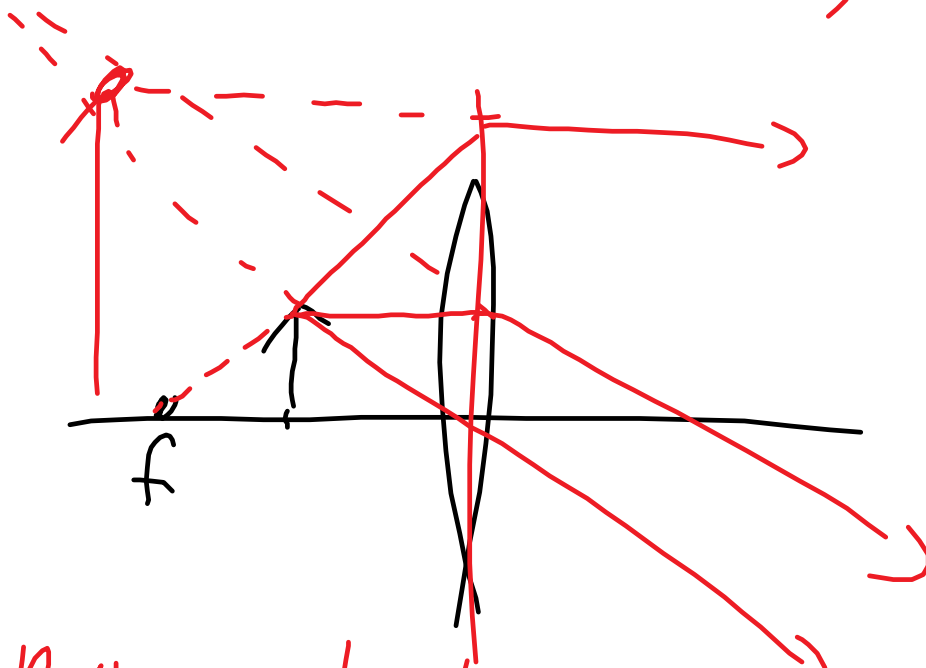


$$\frac{1}{f} = \frac{1}{d_o} + \frac{1}{d_i}$$

$$\frac{1}{8} = \frac{1}{5} + \frac{1}{d_i}$$

$$\frac{5}{40} - \frac{8}{40} = \frac{1}{d_i}$$

$$d_i = -\frac{40}{3} = \boxed{-13.3 \text{ cm}}$$



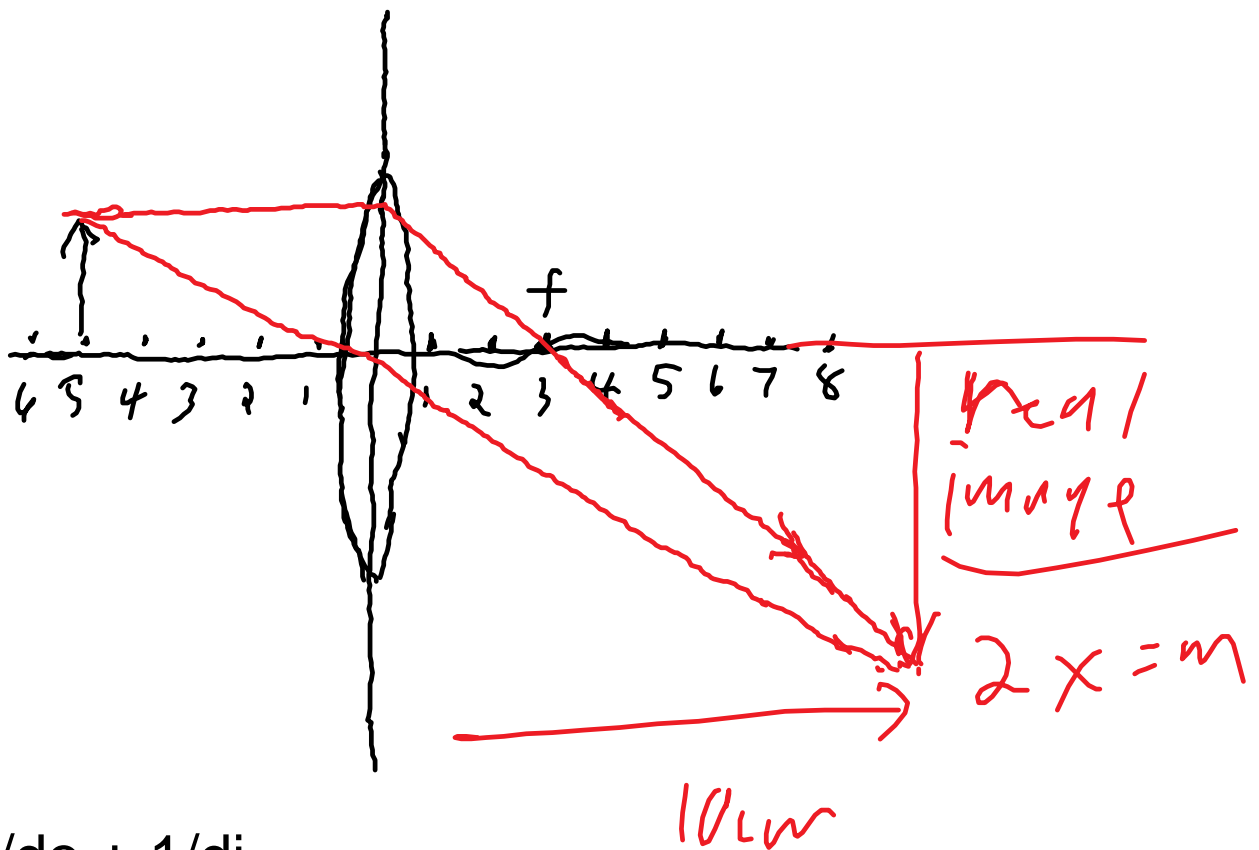
- move out close to focal point

eg.

1. You look at some text with font size of 0.75cm through a lens, 5.0 cm away. What is the size, location and type of image if the lens is

a) concave $f = -3.0\text{cm}$

b) convex $f = 3.0\text{ cm}$



$$1/f = 1/d_o + 1/d_i$$

$$1/3 = 1/5 + 1/d_i$$

$$5/15 = 3/15 + 1/d_i$$

$$2/15 = 1/d_i$$

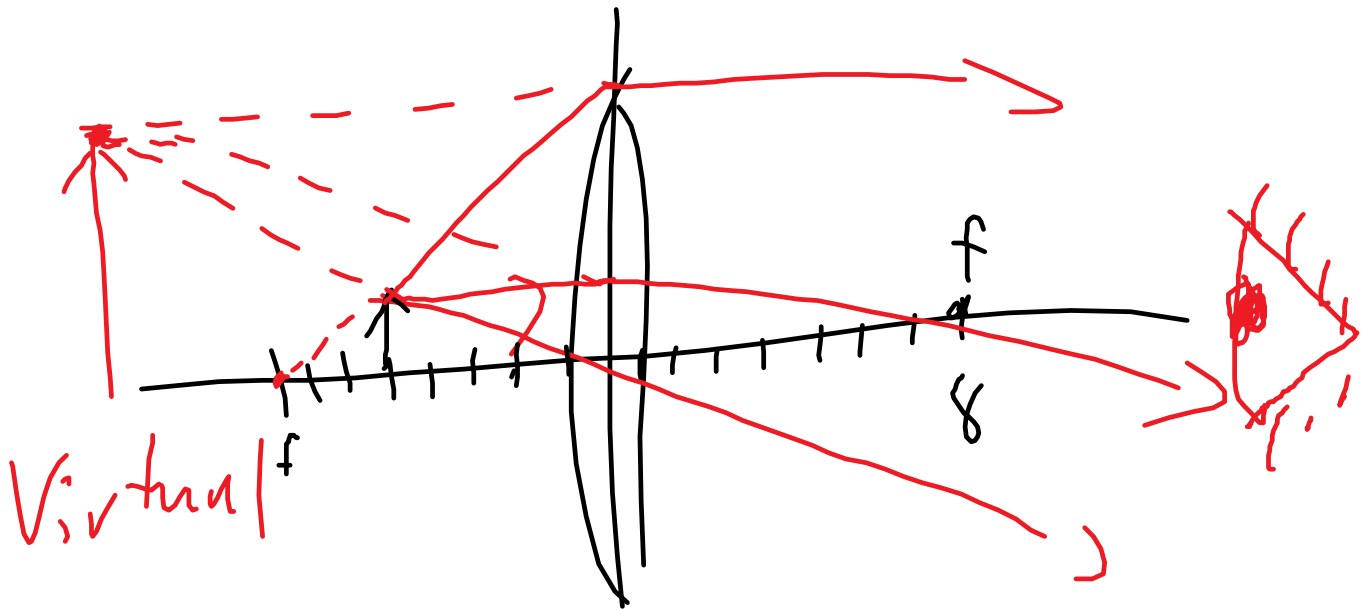
$$d_i = 7.5\text{cm}$$

$$m = -d_i/d_o = -7.5/5 = -1.5 \times$$

$$h_i = m \times h_o = 1.5 \times 0.75 = 1.125\text{ cm}$$

a) convex $f = 8.0\text{ cm}$

a) convex $f = 8.0 \text{ cm}$



$$\frac{1}{f} = \frac{1}{d_o} + \frac{1}{d_i}$$

$$\frac{1}{8} = \frac{1}{5} + \frac{1}{d_i}$$

$$\frac{5}{40} = \frac{8}{40} + \frac{1}{d_i}$$

$$-\frac{3}{40} = \frac{1}{d_i}$$

$$d_i = -\frac{40}{3} = -13 \text{ cm}$$

$$m = -\frac{d_i}{d_o} = -\frac{-13}{5} = 2.6 \times$$